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CLAIMS

*Sub 1*

1. ~~A continuous wave ranging system, comprising an~~  
r.f. generator for generating an r.f. carrier wave, a  
modulator for modulating said r.f. carrier wave in  
accordance with a pseudo-random code, a transmitting  
antenna for radiating a modulated signal from said  
modulator towards a target, a receiving antenna and  
receiver for detecting a signal reflected back from said  
target, a correlator for correlating said signal  
reflected back from said target with said pseudo random  
code which incorporates a selected phase shift  
corresponding to a current range gate to be tested, and  
processing means for processing range/amplitude data  
from said correlator to discriminate between reflections  
due to said target and those due to other objects  
adjacent to said target.

2. A system as claimed in claim 1, wherein a first  
threshold is determined with regard to an amplitude of  
received signals such that signals immediately above  
this threshold are signals returned from said other  
objects.

*Said processing means sets*

3. A system as claimed in claim 2, wherein, a

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✓ second threshold ~~is set~~ such that an analysis of the energy distribution of so returned signals above said second threshold allows determination of said target range.

4. A system as claimed in claim 1, wherein said target is the ground and said other objects are features on the ground.

✓ 5. A system as claimed in claim 2, <sup>said processing means makes</sup> wherein an increasing range scan ~~is made~~ of returned signals from below a range of maximum returned signal strength until a returned signal strength is above said first threshold.

6. ~~A system as claimed in claim 3, wherein a scan is made of pairs of signals above and below a range of maximum returned signal strength until one of said pairs includes a signal below said second threshold, the total energy of said pairs above said first threshold is calculated, and the range of a fixed fraction of said total energy determined~~

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